
This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

GoogleTM books

<https://books.google.com>



TL711

.5
A2
1969

1969 U.S. CIVIL AIRMEN STATISTICS



LIBRARY

SEP 8 1970

UNIVERSITY OF CALIFORNIA
INSTITUTE OF TRANSPORTATION
AND TRAFFIC ENGINEERING

US DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

OFFICE OF MANAGEMENT SYSTEMS

PREFACE

The preparation of the 1969 U. S. Civil Airmen Statistics was prompted by the demands of FAA, other government agencies and industry for more detailed airmen statistics than those previously summarized in other FAA publications. Also, the collection and dissemination of expanded aircraft statistics have created a need for more compatible airmen data. This information is needed to establish more valid relationships between aircraft and airmen and to furnish more realistic bench marks for measuring trends in the civil airmen counts and their overall effect on the many segments of the aviation spectrum.

Statistics pertaining to airmen, both pilot and nonpilot, were obtained from the official airman certification records maintained by the Data Services Division, of the FAA Aeronautical Center, at Oklahoma City, Oklahoma.

The 1969 U. S. Civil Airmen Statistics report was prepared in the Office of Management Systems, Information and Statistics Division, Publications and Service Branch (MS-220), by Sylvia M. Goring.

Suggestions and comments on the scope and content of this report are requested and will be given careful consideration in planning future editions.

Distribution: ZMS-348-C; FAT-1,2,3,5,6 & 8 (1 cy. ea.); FAT-4,7 (1 cy. ea.); FFS-1 (1 cy. ea.); FAS-1 (1 cy. ea.); FIA-0 (1 cy. ea.); FFS-2,3 & 5 (1 cy. ea.)

C O N T E N T S

I.		Page
I.	Active Pilot Certificates Held	1
II.	Active Nonpilot Certificates Held	23
III.	Airman Certificates Issued	29

Tables

1.	Active Airman Certificates Held: December 31, 1960-69	5
2.	Women Actively Engaged in Aviation: December 31, 1959-69	6
3.	Active Pilot Certificates Held, by Class of Certificate, by FAA Region: December 31, 1969	7
4.	Total Active Pilots and Flight Instructors by FAA Region and State: December 31, 1969	9
5.	Active Women Pilots and Flight Instructors by FAA Region and State: December 31, 1969	11
6.	Total Active Helicopter Pilots by Class of Certificate: December 31, 1969	12
7.	Total Active Glider Pilots by Class of Certificate: December 31, 1969	13
8.	Instrument Ratings Held, by Class of Certificate, by FAA Region: December 31, 1969	14
9.	Instrument Ratings Held: December 31, 1968 and 1969	15
10.	Active Pilot Certificates Held, by Category and Age Group of Holder: 1965, 1967, and 1969	16
11.	Airline Transport Certificates Held, by Selected Age Groups: 1961-69	19

C O N T E N T S Tables--Continued

	Page
12. Airline Transport Pilots--Selected Data: 1960-68 ...	20
13. Number and Percent Distribution of Private and Student Pilots by Hours Flown: 1969	21
14. Selected Airman and Aircraft Data: December 31, 1969	22
15. Total Active Nonpilot Airmen by FAA Region and State: December 31, 1969	25
16. Women with Active Nonpilot Certificates by FAA Region and State: December 31, 1969	26
17. Active Nonpilot Certificates Held, by Category and Age Group of Holder: 1965, 1967, and 1969	27
18. Airman Certificate Issuances: Calendar Years 1964-69	31
19. Airman Certificates Issued by Class of Conductor: Calendar Year 1969	32
20. Instrument Ratings Issued: 1968 and 1969	33
21. Student Issuances by Month: 1967-69	35
22. Active Pilots by Type of Certificate: January 1, 1965-1981	36

Charts

Figure

1. Federal Aviation Administration Regions and Regional Offices: December 31, 1969	4
2. Active Pilot Certificates Held: December 31, 1960-69	8

C O N T E N T S
Charts—Continued

Figure	Page
3. Active Private Pilots: December 31, 1969	10
4. Active Airline Transport Pilots by Selected Age Groups: December 31, 1961-69	18
5. Student Certificates Issued Quarterly: 1967-69	34

I. ACTIVE PILOT CERTIFICATES HELD

As of December 31, 1969, the total count of active airmen was 989,803. This included 720,028 pilots and 269,775 airmen with nonpilot ratings, e.g., mechanics, parachute riggers, control tower operators, etc. Total pilots continued upward with a 4-percent increase. This growth fell far short of the 12-percent gain registered in 1968.

The decrease in student pilots reflects the downtrend in student starts which began during the middle of 1968. At the end of 1968, there were 209,406 pilots with student ratings. Following decreases of 6 percent and 15 percent in student starts for 1967 and 1968, the number of student pilots on record as of December 31, 1969, dropped to 203,520.

Private pilots totaled 299,491 at the end of 1969, as compared with 281,728 the previous year. This growth trend has persisted since 1961; however, the rate of increase was 4 percentage points below that recorded during 1968 (11 percent). Despite the 3-percent decrease in student pilots and the deceleration in the growth rate of private pilots, their combined proportionate representation remained the same as that for 1968. Together, they totaled 503,011 and accounted for 70 percent of all active pilots.

The 176,585 pilots with commercial ratings exceeded the 1968 count, 164,458, by 7 percent. Third in proportionate representation, commercial pilots made up approximately one-fourth of all active pilots.

Following a peak growth rate of 11 percent in 1968, the 1969 increase in pilots with ATR ratings dipped slightly to 10 percent, thereby raising their absolute representation from 28,607 in 1968 to 31,442.

As is shown in table 11 and figure 4, during 1965 and 1966, the majority of ATR pilots were in the age group 45 years and over. Since 1967, there has been a reversal in this trend. At the close of 1969, the ratios were 51 percent and 49 percent, with the larger number in the younger age group. Additional optimism may be stimulated by a closer examination of those age groups comprising the younger segment. ATR pilots 20-34 years have shown a greater growth rate than those 35-44 years. In addition, their proportionate representation has been increasing at a greater rate than those pilots between 35 and 44 years. This trend is better illustrated in the following data.

Number and Percent Distribution of ATR Pilots 20-34 Years
and 35-44 Years: 1965-1969

<u>Year</u>	<u>Total 20-44 years</u>	<u>20-34 years</u>			<u>35-44 years</u>		
		<u>Number</u>	<u>% of total</u>	<u>% change</u>	<u>Number</u>	<u>% of total</u>	<u>% change</u>
1965	10,997	1,970	18	--	9,027	82	--
1966	10,916	2,043	19	+4	8,873	81	-2
1967	13,075	3,402	26	+67	9,673	74	+9
1968	14,471	4,481	31	+32	9,990	69	+3
1969	16,121	5,611	35	+25	10,510	65	+5

During the last quarter of 1968, the size of the U.S. air carrier fleet totaled 2,586, as compared with 2,135 in 1960. During this period the number of pilots and copilots employed by the certificated route air carriers has more than doubled—from 11,460 to 24,586 (215 percent). Of the 28,607 pilots with ATR ratings at the close of 1968, 86 percent were employed by the certificated route air carriers. Table 14 shows employment and earnings of pilots and copilots from 1960-1968.

Again, pilots with certificates to fly helicopters (only), registered the greatest increase. Rising 35 percent above their 1968 total of 3,166, they numbered 4,286 at the close of 1969. In addition to the 2,627 glider (only) pilots, there were 7,280 pilots with combination certificates which included glider ratings. More realistic counts of helicopter and glider pilots appear in the following table which includes all pilots with helicopter and glider ratings.

Total Helicopter and Glider Pilots: 1966-1969

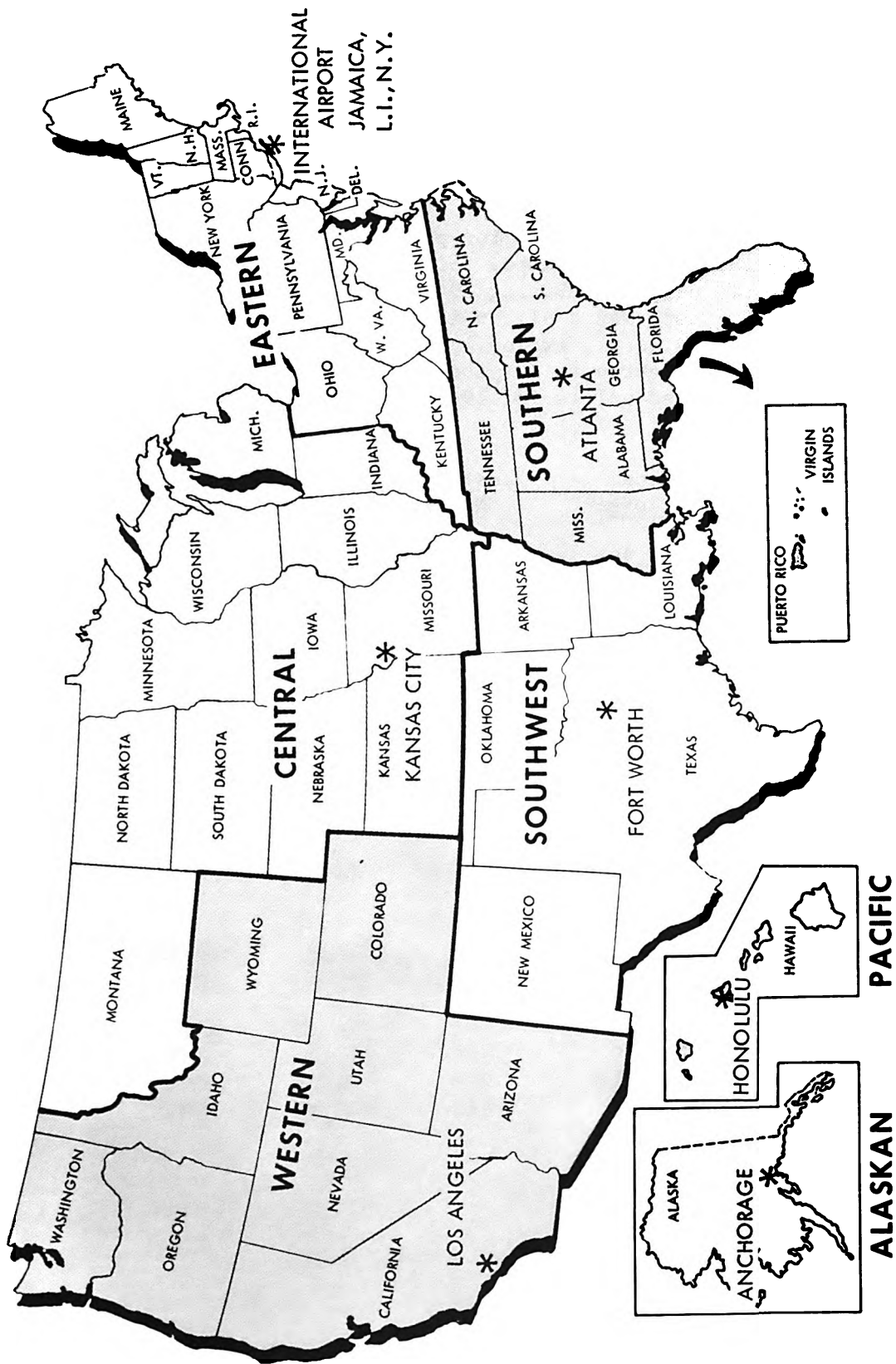
<u>Calendar year</u>	<u>Total Helicopter pilots</u>		<u>Total Glider pilots</u>	
	<u>Number</u>	<u>% change</u>	<u>Number</u>	<u>% change</u>
1966	12,693	--	6,312	--
1967	14,779	+16	7,399	+17
1968	17,607	+19	8,735	+18
1969	20,896	+19	9,907	+13

The reversal in the number of flight instructors with active certificates at the close of 1968, caused by a change in the selection criteria, was offset by a 9-percent gain in 1969. Following a 32-percent decline in 1968, the flight instructor count turned upward and at the close of 1969, the count was 33,992. This trend was also evident in the number of women flight instructors. After a 16-percent decline in 1968, the number of women with flight instructor ratings rose from 531 to 560.

The decrease in the growth rate for pilots was also reflected in the number of instrument rated pilots. Since 1966, the annual rate of growth remained at 14 percent. During 1969, this figure rose only 11 percent to 155,879. There was a slight increase in the ratio of instrument rated pilots to the total, excluding students. From 29 percent in 1968, this ratio rose slightly to 30 percent in 1969. A detailed distribution of instrument rated pilots for 1965-1969 appears below.

<u>Calendar year</u>	<u>Total pilots^{1/}</u>	<u>Instrument rated pilots</u>	
		<u>Number</u>	<u>% of total</u>
1965	340,598	93,637	28
1966	383,580	107,171	28
1967	436,644	122,573	28
1968	482,289	139,346	29
1969	516,508	155,879	30

^{1/}Excludes student pilots.



* Regional Offices

Figure 1. Federal Aviation Administration Regions and Regional Offices: December 31, 1969

Table 1.—Active Airman Certificates Held: December 31, 1960-69

Category	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Pilot--total	348,062	1/352,860	365,971	378,700	431,041	479,770	548,757	617,931	691,695	720,028
Student	99,182	93,973	95,870	105,298	120,743	139,172	165,177	181,287	209,406	203,520
Private	138,869	1/144,312	149,405	152,209	175,574	196,393	222,427	253,312	281,728	299,491
Commercial	89,904	1/92,976	96,047	96,341	108,428	116,665	131,539	150,135	164,458	176,585
Airline transport	18,279	1/19,155	20,032	20,269	21,572	22,440	23,917	25,817	28,607	31,442
Helicopter (only)	616	1/677	738	823	1,058	1,392	1,819	2,573	3,166	4,286
Glider (only)	802	894	967	1,045	1,227	1,411	1,602	1,866	2,193	2,627
Other pilot	410	873	2,912	2,715	2,439	2,297	2,276	2/2,941	2,137	2,077
Non-pilot--total ...	169,598	1/175,287	181,982	186,304	195,396	204,463	217,132	231,801	250,151	269,775
Mechanic	115,688	118,689	122,160	124,945	130,131	135,351	140,799	146,572	158,211	170,716
Parachute rigger	2,936	3,127	3,400	3,569	4,226	4,584	4,927	5,347	5,700	6,070
Ground instructor	29,421	29,526	29,964	30,295	30,801	31,403	32,217	34,262	37,889	41,234
Dispatcher	3,405	3,542	3,669	3,796	3,961	4,104	4,259	4,441	4,766	5,026
Control tower operator	9,784	1/11,110	12,436	12,987	14,304	14,875	16,046	17,425	18,610	19,851
Flight radio operator 2/...	131	3/	3/	3/	3/	3/	3/	3/	3/	3/
Flight navigator 2/...	1,533	1/1,529	1,630	1,820	1,625	1,797	2,384	2,891	2,966	3,011
Flight engineer	6,680	7,701	8,723	8,992	10,348	12,349	16,500	20,863	22,009	23,867
Flight instructor certificates	31,459	1/30,165	28,873	29,618	32,158	34,904	38,897	44,421	30,361	33,992
Instrument ratings 4/	63,264	1/68,092	72,920	74,451	84,442	93,637	107,171	122,573	139,346	155,879

1/Estimated.

2/No medical examination required, therefore, no determination as to activity can be made. Numbers represent all certificates on record.

3/Requirements for issue and possession of flight radio operator certificates deleted from the Federal Aviation Regulations.

4/Special ratings shown on pilot certificates represented above; hence do not indicate additional certificates.

Table 2.—Women Actively Engaged in Aviation: December 31, 1959-69

Category of certificates held	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total certificates held	12,339	12,471	<u>1/12,677</u>	12,960	14,259	17,279	20,303	23,180	26,771	31,639	32,891
Pilot--total	<u>9,870</u>	<u>9,966</u>	<u>10,246</u>	<u>10,512</u>	<u>11,757</u>	<u>14,627</u>	<u>17,555</u>	<u>20,265</u>	<u>23,659</u>	<u>28,401</u>	<u>29,419</u>
Student	5,801	5,748	5,875	5,939	6,755	8,179	10,106	11,424	13,173	16,234	16,055
Private	3,246	3,425	3,554	3,683	4,004	5,218	6,147	7,319	8,775	10,164	11,174
Commercial	782	738	733	728	813	1,047	1,137	1,317	1,479	1,691	1,824
Airline transport	21	25	26	27	51	55	40	61	57	71	76
Helicopter (only)	---	---	---	2	3	6	10	14	16	16	14
Glider (only) ...	17	19	25	25	32	43	51	70	77	91	111
Other categories	3	11	33	108	99	79	64	60	82	134	165
Nonpilot--total	<u>2,107</u>	<u>2,080</u>	<u>2,084</u>	<u>2,116</u>	<u>2,142</u>	<u>2,235</u>	<u>2,280</u>	<u>2,376</u>	<u>2,477</u>	<u>2,707</u>	<u>2,912</u>
Mechanic	118	110	117	137	141	166	182	197	196	229	269
Parachute rigger	405	399	398	392	398	411	415	426	434	445	449
Ground instructor	1,454	1,426	1,423	1,439	1,449	1,477	1,505	1,573	1,637	1,769	1,917
Dispatcher	3	19	19	22	22	23	23	23	28	30	36
Control tower operator	127	126	127	126	132	155	152	149	165	205	222
Flight engineer ..	---	---	---	---	---	3	3	8	16	28	18
Flight navigator	---	---	---	---	---	---	---	---	1	1	1
Flight instructor ..	<u>362</u>	<u>425</u>	<u>347</u>	<u>332</u>	<u>360</u>	<u>417</u>	<u>468</u>	<u>539</u>	<u>635</u>	<u>531</u>	<u>560</u>
<u>1/Estimated</u>											

Table 3.—Active Pilot Certificates Held, by Class of Certificate, by FAA Region: December 31, 1969

	Total	Eastern	Southern	Central	South-west	Western	Alaskan	Pacific	Foreign
Pilot—total	720,028	173,966	92,131	167,738	88,018	179,036	5,447	1,976	11,716
Private pilots—total	299,491	68,940	33,215	76,417	36,099	76,532	2,040	509	5,739
Private airplane (only)	294,905	67,646	32,658	75,667	35,613	75,114	2,027	490	5,690
Private airplane, private glider	2,632	820	327	433	230	773	7	17	25
Private airplane, commercial glider	349	115	25	51	33	121	2	---	2
Private airplane, private autogiro	11	2	2	1	3	3	---	---	---
Private airplane, private helicopter ...	544	137	54	87	53	197	2	1	13
Private airplane, private glider, private helicopter	30	14	3	2	3	8	---	---	---
Private airplane, commercial helicopter ..	1,009	203	145	173	163	313	2	1	9
Private airplane, private glider, commercial helicopter	4	1	---	2	---	1	---	---	---
Private airplane, commercial glider, commercial helicopter	2	1	---	---	1	---	---	---	---
Private airplane (other)	5	1	1	1	---	2	---	---	---
Commercial pilots—total	176,585	41,992	25,639	36,434	23,880	44,443	1,216	622	2,359
Commercial airplane (only)	157,847	37,406	22,461	33,473	20,909	39,737	1,117	564	2,180
Commercial airplane, private glider	993	315	109	142	96	314	2	5	10
Commercial airplane, commercial glider ..	2,839	740	415	456	356	838	8	14	12
Commercial airplane, commercial autogiro ..	24	2	1	10	2	8	1	---	---
Commercial airplane, private helicopter ..	80	20	8	9	6	36	---	---	1
Commercial airplane, commercial glider, private helicopter	5	1	1	---	---	3	---	---	---
Commercial airplane, commercial helicopter	14,374	3,394	2,595	2,279	2,459	3,377	81	38	151
Commercial airplane, private glider, commercial helicopter	55	19	3	8	5	16	1	---	3
Commercial airplane, commercial glider, commercial helicopter	350	89	42	55	46	111	4	1	2
Commercial airplane, commercial helicopter, commercial autogiro	12	4	3	1	1	1	2	---	---
Commercial airplane (other)	6	2	1	1	---	2	---	---	---
Airline transport pilots—total	31,442	8,310	4,910	5,160	3,335	8,180	214	179	1,154
Airline transport airplane	31,343	8,283	4,892	5,146	3,320	8,161	213	178	1,150
Airline transport airplane, airline transport helicopter	99	27	18	14	15	19	1	1	4
Rotorcraft (only)—total	4,286	1,038	805	651	719	982	12	14	65
Private gyroplane	9	---	1	4	1	2	---	---	1
Commercial gyroplane	4	---	2	1	---	1	---	---	---
Private helicopter	216	57	19	31	11	92	2	---	4
Commercial helicopter	3,824	920	766	588	679	797	7	12	55
Commercial helicopter, private glider ..	3	---	---	1	1	---	---	---	1
Commercial helicopter, commercial glider ..	5	2	1	1	1	---	---	---	---
Airline transport helicopter	219	58	15	24	25	88	3	2	4
Other	6	1	1	1	1	2	---	---	---
Glider (only)—total	2,627	895	131	310	162	1,067	---	36	26
Private glider	1,998	681	98	198	99	869	---	30	23
Commercial glider	629	214	33	112	63	198	---	6	3
Student pilots—total	203,520	52,254	27,110	48,196	23,610	47,419	1,962	614	2,355
Other pilots—total	2,077	537	321	570	213	413	3	2	18
Nonpilot--total	269,775	77,605	36,794	45,309	30,974	68,191	1,543	1,960	7,399
Mechanic	170,716	51,207	21,597	27,454	19,097	43,586	1,058	1,532	5,185
Parachute rigger	6,070	1,666	956	910	736	1,701	36	18	47
Ground instructor	41,234	11,198	5,493	8,443	5,636	9,598	173	111	582
Dispatcher	5,026	1,506	660	446	227	943	87	84	1,073
Control tower operator	19,851	5,197	3,763	3,314	2,749	4,399	120	154	155
Flight navigator ^{1/}	3,011	1,094	228	147	105	1,352	1	25	59
Flight engineer	23,867	5,737	4,097	4,595	2,424	6,612	68	36	298
Flight instructor certificates—total	33,992	7,751	4,690	7,061	4,772	9,040	333	112	233
Instrument ratings ^{2/}	155,879	39,552	23,889	31,015	19,164	38,098	721	609	2,831

^{1/}No medical examination required, therefore, no determination as to activity can be made. Numbers represent all certificates on record.^{2/}Special ratings shown on pilot certificates represented above; hence do not indicate additional certificates.

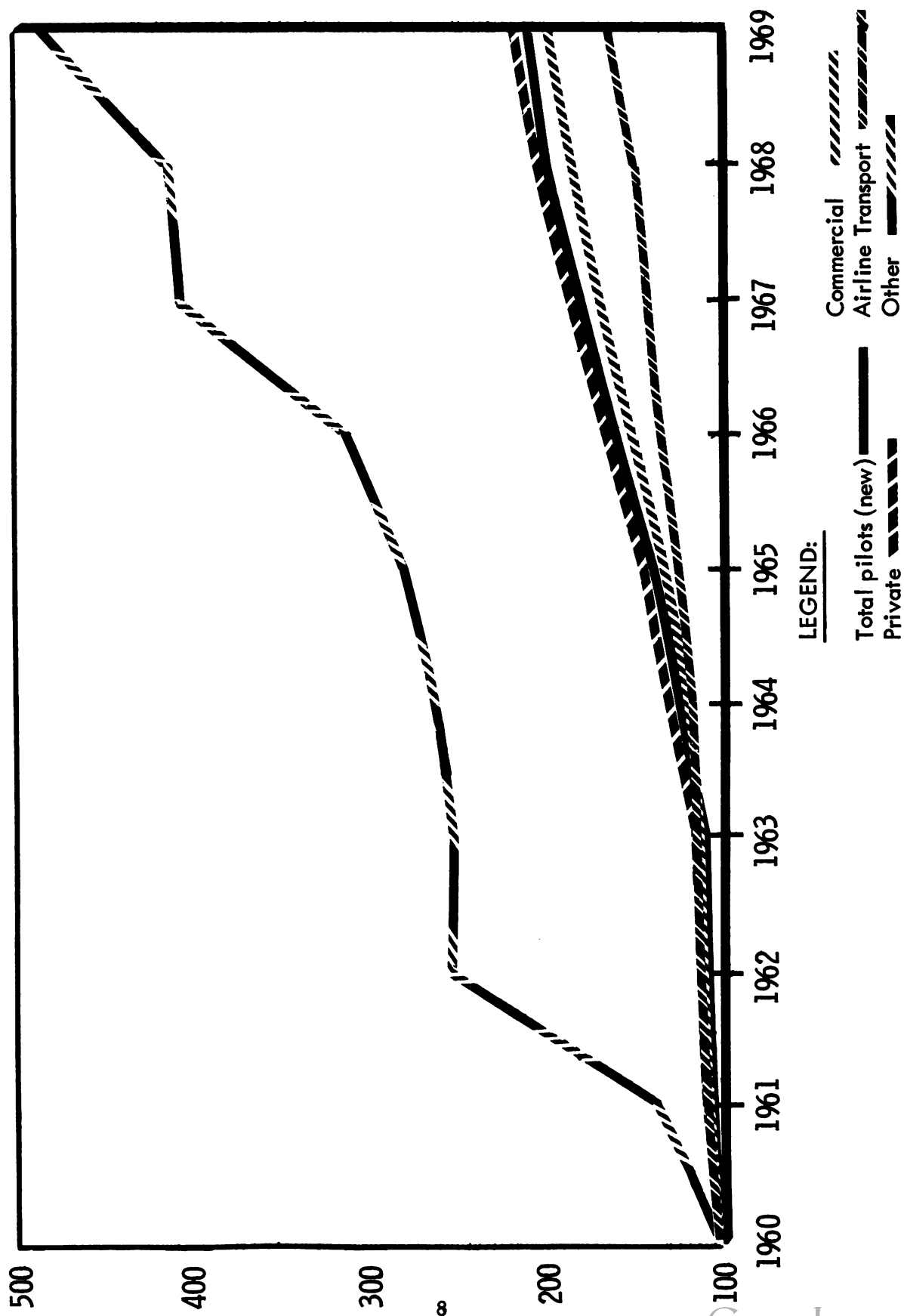


Figure 2. Active Pilot Certificates Held: December 31, 1960-69

Table 4.—Total Active Pilots and Flight Instructors by FAA Region and State: December 31, 1969

FAA region and state	Total pilots	Airline transport	Commercial	Private	Other pilot categories	Student	Flight instructor ^{1/}
Total	720,028	31,442	176,585	299,491	8,990	203,520	33,992
United States--total	708,312	30,288	174,226	293,752	8,881	201,165	33,759
Eastern region--total ...	173,966	8,310	41,992	68,940	2,470	52,254	7,751
Connecticut	8,976	759	2,085	3,247	116	2,769	382
Delaware	1,691	85	408	704	21	473	61
District of Columbia .	1,566	82	498	602	42	342	35
Kentucky	6,406	92	1,381	2,576	81	2,276	265
Maine	3,029	41	761	1,137	34	1,056	147
Maryland	8,711	316	1,874	3,586	137	2,798	361
Massachusetts	12,765	565	3,219	4,701	186	4,094	540
New Hampshire	2,333	201	643	834	31	624	111
New Jersey	19,328	1,612	4,745	7,055	273	5,643	995
New York	35,160	2,169	8,516	13,669	575	10,231	1,490
Ohio	31,316	618	6,654	14,055	347	9,642	1,412
Pennsylvania	24,651	814	6,088	10,176	311	7,262	1,111
Rhode Island	1,589	54	462	590	33	450	67
Vermont	1,195	27	283	469	17	399	64
Virginia	12,517	834	3,650	4,415	237	3,381	602
West Virginia	2,733	41	725	1,124	29	814	108
Southern region--total ..	92,131	4,910	25,639	33,215	1,257	27,110	4,690
Alabama	10,028	192	2,918	3,957	215	2,746	747
Florida	33,926	2,610	10,323	11,303	424	9,266	1,552
Georgia	15,194	1,268	3,803	5,114	211	4,798	769
Mississippi	5,679	72	1,551	2,213	55	1,788	259
North Carolina	11,314	290	2,877	4,281	183	3,683	501
South Carolina	5,597	118	1,568	1,998	67	1,846	305
Tennessee	10,393	360	2,599	4,349	102	2,983	557
Central region--total ...	172,914	5,216	37,725	78,863	1,557	49,553	7,351
Illinois	34,760	1,792	7,780	15,047	540	9,601	1,575
Indiana	16,969	304	3,372	8,115	111	5,067	697
Iowa	12,432	84	2,567	6,210	72	3,499	492
Kansas	15,019	445	3,555	7,146	83	3,790	573
Michigan	25,706	621	4,874	11,790	201	8,220	992
Minnesota	18,014	872	4,080	7,972	150	4,940	720
Missouri	17,346	661	4,046	7,503	166	4,970	765
Montana	5,176	56	1,291	2,446	26	1,357	290
Nebraska	7,536	82	1,746	3,607	40	2,061	321
North Dakota	3,784	20	926	1,551	16	1,271	167
South Dakota	3,608	29	852	1,669	32	1,026	170
Wisconsin	12,564	250	2,636	5,807	120	3,751	589
Southwest region--total .	88,018	3,335	23,880	36,099	1,094	23,610	4,772
Arkansas	6,275	75	1,712	2,575	46	1,867	275
Louisiana	10,184	294	2,881	3,866	112	3,031	484
New Mexico	6,015	68	1,431	2,845	66	1,605	357
Oklahoma	13,861	428	3,569	5,956	192	3,716	718
Texas	51,683	2,470	14,287	20,857	678	13,391	2,938
Western region--total ...	173,860	8,124	43,152	74,086	2,436	46,062	8,750
Arizona	9,824	209	2,604	4,082	104	2,825	481
California	104,722	5,635	25,621	44,962	1,633	26,871	4,835
Colorado	14,410	907	3,591	5,343	196	4,373	854
Idaho	4,263	78	1,086	1,977	32	1,090	243
Nevada	3,290	97	822	1,320	30	1,021	250
Oregon	10,819	130	2,485	5,179	87	2,938	530
Utah	4,698	94	1,157	2,145	40	1,262	200
Washington	19,609	942	5,234	8,026	296	5,111	1,246
Wyoming	2,225	32	552	1,052	18	5/1	111
Alaskan region--total ...	5,447	214	1,216	2,040	15	1,962	333
Pacific region--total ...	1,976	179	622	509	52	614	112
Outside U.S.--total	11,716	1,154	2,359	5,739	109	2,355	233

^{1/} Not included in total.

Table 5.—Active Women Pilots and Flight Instructors by FAA Region and State: December 31, 1969

FAA region and state	Total pilots	Airline transport	Commercial	Private	Other pilot categories	Student	Flight instructor ^{1/}
Total	29,419	76	1,824	11,293	171	16,055	560
United States--total	29,129	76	1,801	11,151	169	15,932	558
Eastern region--total ...	6,690	17	419	2,416	60	3,778	127
Connecticut	347	4	29	105	1	208	6
Delaware	66	--	3	31	1	31	1
District of Columbia .	84	--	8	36	1	39	---
Kentucky	240	--	10	77	---	153	4
Maine	95	--	5	32	---	58	1
Maryland	380	1	21	129	6	223	6
Massachusetts	512	--	37	157	2	316	11
New Hampshire	81	--	9	31	---	41	5
New Jersey	668	1	44	229	11	383	13
New York	1,292	5	81	495	19	692	19
Ohio	1,360	2	84	508	8	758	34
Pennsylvania	940	3	50	364	9	514	15
Rhode Island	46	--	4	19	---	23	2
Vermont	62	--	6	22	1	33	2
Virginia	440	1	24	152	1	262	7
West Virginia	77	--	4	29	---	44	1
Southern region--total ..	3,322	10	198	1,088	13	2,013	58
Alabama	365	--	22	142	1	200	8
Florida	1,362	3	91	446	2	820	24
Georgia	495	1	22	144	1	327	7
Mississippi	194	1	16	61	1	115	7
North Carolina	361	2	15	119	3	222	1
South Carolina	181	2	8	52	3	116	6
Tennessee	364	1	24	124	2	213	5
Central region--total ...	7,149	11	407	2,818	21	3,892	127
Illinois	1,375	3	90	532	7	743	29
Indiana	729	--	46	281	1	401	12
Iowa	498	--	25	216	---	257	8
Kansas	779	1	38	360	2	378	13
Michigan	1,072	2	72	372	3	623	24
Minnesota	580	2	25	230	2	321	10
Missouri	779	--	44	305	3	427	9
Montana	249	--	20	101	---	128	3
Nebraska	331	1	14	145	1	170	4
North Dakota	130	--	9	30	---	91	5
South Dakota	137	--	2	59	---	76	2
Wisconsin	490	2	22	187	2	277	8
Southwest region--total .	3,511	10	202	1,453	11	1,835	72
Arkansas	213	--	17	73	1	122	4
Louisiana	345	3	26	108	---	208	10
New Mexico	315	--	19	135	2	159	5
Oklahoma	638	3	39	263	3	330	11
Texas	2,000	4	101	874	5	1,016	42
Western region--total ...	7,996	27	544	3,225	61	4,139	164
Arizona	518	2	47	214	1	254	14
California	4,932	15	344	2,042	17	2,514	94
Colorado	692	7	44	237	32	372	14
Idaho	184	--	12	70	4	98	7
Nevada	144	1	10	56	---	77	3
Oregon	499	--	29	209	1	260	9
Utah	158	--	10	67	---	81	4
Washington	778	2	45	298	6	427	18
Wyoming	91	--	3	32	---	56	1
Alaskan region--total ...	357	--	21	122	---	214	6
Pacific region--total ...	104	1	10	29	3	61	4
Outside U.S.--total	290	--	23	142	2	123	2

^{1/} Not included in total.

Table 6.—Total Active Helicopter Pilots by Class of
Certificate: December 31, 1969

Class of certificate	Number of certificates held
Total	20,896
Private autogiro, private airplane	11
Private helicopter, private airplane	544
Private helicopter, private airplane, private autogiro	30
Private airplane, commercial glider, private helicopter	13
Private airplane, commercial helicopter	997
Private airplane, private glider, commercial helicopter	4
Private airplane, commercial glider, commercial helicopter	2
Commercial autogiro, commercial airplane	24
Commercial autogiro, commercial airplane, com- mercial glider	2
Commercial airplane, private helicopter	80
Commercial airplane, private glider, private helicopter	2
Commercial airplane, commercial glider, private helicopter	5
Commercial airplane, commercial helicopter	14,374
Commercial airplane, private glider, commercial helicopter	55
Commercial airplane, commercial glider, com- mercial helicopter	350
Commercial airplane, commercial gyroplane, com- mercial helicopter	12
Private gyroplane	8
Commercial autogiro	3
Commercial autogiro, commercial glider	3
Private helicopter	216
Commercial helicopter	3,824
Commercial helicopter, private glider	3
Commercial helicopter, commercial glider	5
Airline transport helicopter	219
Airline transport airplane, airline transport helicopter	99
Other	11

Table 7.—Total Active Glider Pilots by Class of Certificate
December, 31, 1969

Class of certificate	Number of certificates held
Total	9,907
Glider (only), private	1,998
Glider (only), commercial	629
Commercial airplane, private glider	993
Commercial airplane, commercial glider	2,839
Commercial airplane, commercial autogiro, commercial helicopter	2
Commercial airplane, private glider, private helicopter	2
Commercial airplane, commercial glider, private helicopter	5
Commercial airplane, private glider, commercial helicopter	55
Commercial airplane, commercial glider, com- mercial helicopter	350
Private airplane, private glider	2,615
Private airplane, commercial glider	349
Private airplane, private glider, private heli- copter	30
Private airplane, private glider, commercial helicopter	4
Private airplane, commercial glider, commercial helicopter	2
Private airplane, commercial glider, private helicopter	1
Private helicopter, private glider	1
Commercial helicopter, private glider	3
Commercial helicopter, commercial glider	6
Other	23

Table 8.—Instrument Ratings Held, by Class of Certificate, by FAA Region: December 31, 1969

Class of certificate	Total	Eastern	Southern	Central	South- west	Western	Alaskan	Pacific	Foreign
Total—all groups	155,879	39,552	23,889	31,015	19,164	38,098	721	609	2,831
Private—total	11,617	3,048	1,326	3,030	1,285	2,632	11	3	282
Private airplane (only)	11,073	2,901	1,234	2,939	1,219	2,490	10	2	278
Private airplane, private glider	289	83	45	46	29	82	1	1	2
Private airplane, commercial glider	34	9	5	6	5	9	---	---	---
Private airplane, private helicopter	76	21	10	16	7	22	---	---	---
Private airplane, private glider, private helicopter	6	4	1	---	1	---	---	---	2
Private airplane, commercial helicopter ..	102	26	29	23	22	---	---	---	---
Private airplane, private glider, commercial helicopter	29	1	---	---	---	28	---	---	---
Private airplane, commercial glider, commercial helicopter	2	1	---	---	1	---	---	---	---
Private airplane, private autogiro	4	2	1	---	1	---	---	---	---
Private airplane (other)	2	---	1	---	---	1	---	---	---
Commercial—total	111,876	27,930	17,440	22,699	14,448	27,057	491	423	1,388
Commercial airplane (only)	98,839	24,593	15,035	20,570	12,532	23,982	440	384	1,303
Commercial airplane, private glider	587	200	60	83	53	183	---	3	5
Commercial airplane, commercial glider ..	1,640	428	265	272	189	470	2	7	7
Commercial airplane, private helicopter ..	38	7	5	3	4	18	---	---	1
Commercial airplane, private glider, private helicopter	1	---	---	---	---	1	---	---	---
Commercial airplane, commercial glider, private helicopter	3	---	1	---	---	2	---	---	---
Commercial airplane, commercial heli- copter	10,467	2,631	2,037	1,718	1,632	2,307	46	28	68
Commercial airplane, private glider, commercial helicopter	36	12	2	5	4	11	---	---	2
Commercial airplane, commercial glider, commercial helicopter	249	58	34	39	33	79	3	1	2
Commercial airplane, commercial autogiro	13	1	1	7	---	4	---	---	---
Commercial airplane, commercial autogiro, commercial glider	3	---	---	2	1	---	---	---	---
Airline transport—total	31,442	8,310	4,910	5,160	3,335	8,180	214	179	1,154
Airline transport airplane	31,343	8,283	4,892	5,146	3,320	8,161	213	178	1,150
Airline transport airplane, airline trans- port helicopter	99	27	18	14	15	19	1	1	4
Rotorcraft—total	944	264	213	126	96	229	5	4	7
Commercial helicopter	724	206	197	102	71	141	2	2	3
Airline transport helicopter	219	58	15	24	25	88	3	2	4
Commercial helicopter (other)	1	---	1	---	---	---	---	---	---

Table 9.—Instrument Ratings Held: December 31, 1968 and 1969

Class of certificate	1969	1968	Percent change
Total—all groups	155,879	139,346	+12
Private pilots—total	11,617	9,460	+23
Private airplane (only)	11,073	9,020	+23
Private airplane, private glider	289	238	+21
Private airplane, commercial glider ...	34	26	+31
Private airplane, private helicopter ..	76	76	---
Private airplane, private glider, private helicopter	6	6	---
Private airplane, commercial helicopter	102	88	+16
Private airplane, private glider, com- mercial helicopter	29	1	---
Private airplane, commercial glider, commercial helicopter	2	2	---
Private airplane, private autogiro	4	2	+100
Private airplane (other)	2	1	+100
Commercial pilots—total	111,876	100,486	+11
Commercial airplane (only)	98,839	89,122	+11
Commercial airplane, private glider ...	587	469	+25
Commercial airplane, commercial glider.	1,640	1,456	+13
Commercial airplane, private helicopter	38	37	+3
Commercial airplane, private glider, private helicopter	1	2	-50
Commercial airplane, commercial glider, private helicopter	3	3	---
Commercial airplane, commercial heli- copter	10,467	9,161	+14
Commercial airplane, private glider, commercial helicopter	36	27	+33
Commercial airplane, commercial glider, commercial helicopter	249	196	+27
Commercial airplane, commercial auto- giro	13	10	+30
Commercial airplane, commercial auto- giro, commercial glider	1	1	---
Commercial airplane, commercial heli- copter, commercial autogiro	2	2	---
Airline transport pilots—total	31,442	28,607	+10
Airline transport airplane	31,343	28,536	+10
Airline transport airplane, airline transport helicopter	99	71	+39
Rotorcraft pilots—total	944	793	+19
Commercial helicopter	724	589	+23
Airline transport helicopter	219	202	+8
Other	1	2	-50

Table 10.—Active Pilot Certificates Held, by Category and Age Group of Holder: 1965, 1967, and 1969

Age group	Type of pilot certificate														
	Total active pilots			Student			Private airplane			Commercial airplane			Airline transport		
	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965
	720,028	617,931	479,770	203,520	181,287	139,172	299,491	253,312	196,393	176,585	150,135	116,665	31,442	25,817	22,440
Total	33,131	27,460	18,738	24,995	21,465	17,027	7,283	5,281	1,588	588	517	81	---	---	---
16-19	99,360	83,175	52,951	50,498	45,570	34,317	32,707	26,260	14,715	14,180	10,413	3,645	164	52	8
20-24	124,952	98,454	62,634	42,490	37,935	25,997	42,451	33,985	21,846	36,248	24,432	13,681	1,712	740	334
25-29	103,277	88,230	71,599	28,157	25,867	21,379	41,794	34,473	26,837	28,264	24,083	20,827	3,735	2,610	1,628
30-34	98,077	90,339	75,382	21,675	20,579	16,754	44,449	41,971	36,653	25,405	22,069	17,508	5,480	4,506	3,478
35-39	89,115	87,223	78,514	16,139	13,918	10,893	49,009	44,547	37,403	18,006	22,686	23,876	5,030	5,167	5,549
40-44	87,341	76,917	63,440	10,287	8,551	6,112	38,447	31,576	26,417	29,731	28,231	23,148	8,134	7,681	7,045
45-49	49,320	38,323	30,833	5,411	4,521	3,084	22,953	18,847	16,194	15,690	11,231	8,434	4,818	3,281	2,782
50-54	21,671	16,966	14,362	2,464	1,849	1,200	12,065	9,653	8,490	5,281	3,990	3,333	1,648	1,290	1,189
55-59	13,784	10,844	11,317	1,404	1,032	2,409	8,333	6,719	6,250	3,192	2,483	2,132	721	490	427
60 and over															
	Type of pilot certificate														
	Helicopter (only)			Glider (only)			Other pilot categories			Flight instructor 1/					
	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965
4,286	2,573	1,392	2,627	1,866	1,411	2,077	2,941	2,297	33,992	44,421	34,904				
Total.....	27	9	1	225	176	41	12	12	---	161	144	26			
16-19	1,299	589	87	329	137	100	183	154	79	3,877	3,195	1,329			
20-24	1,457	824	398	242	169	108	352	369	270	8,330	5,957	3,122			
25-29	701	551	400	282	172	130	344	474	398	5,727	5,587	4,141			
30-34	396	306	269	318	311	261	354	597	459	3,976	5,466	4,471			
35-39	225	156	134	378	251	230	328	498	429	3,345	6,714	6,877			
40-44	109	93	62	370	325	289	263	460	367	4,038	8,776	7,739			
45-49	40	27	20	259	192	152	149	224	167	2,525	5,020	4,273			
50-54	14	9	13	146	90	69	53	85	68	1,264	2,286	1,860			
55-59	18	9	8	78	43	31	39	68	60	749	1,276	1,066			
60 and over															

1/Not included in total active pilots.

Table 10.—Active Pilot Certificates Held, by Category and Age Group of Holder: 1965, 1967, and 1969—Continued

Age group	Type of pilot certificate											
	Total active pilots			Student			Private airplane			Commercial airplane		
	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965
	100	100	100	100	100	100	100	100	100	100	100	100
Total	5	4	4	12	12	12	2	2	1	*	*	*
16-19	14	14	11	25	25	25	11	10	8	7	3	---
20-24	17	16	13	21	21	19	14	13	11	16	5	*
25-29	14	14	15	14	14	15	14	14	14	16	12	3
30-34	14	15	16	10	11	12	15	17	19	15	10	7
35-39	12	14	16	8	8	8	16	18	19	10	17	16
40-44	12	12	13	5	5	4	13	12	13	17	20	25
45-49	7	6	7	3	2	2	8	7	8	9	26	31
50-54	3	3	3	1	1	1	4	4	4	3	15	12
55-59	2	2	2	1	1	2	3	3	3	2	5	5
60 and over											2	2

Age group	Type of pilot certificate											
	Helicopter (only)			Glider (only)			Other pilot categories			Flight instructor 1/		
	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965
	100	100	100	100	100	100	100	100	100	100	100	100
Total	1	*	*	9	10	3	1	*	---	*	*	*
16-19	30	23	6	12	7	7	9	5	3	11	7	4
20-24	35	32	29	9	9	8	17	13	12	25	14	9
25-29	16	22	29	11	9	9	17	16	17	17	13	12
30-34	9	12	19	12	17	19	17	20	20	12	12	13
35-39	5	6	10	14	14	16	16	17	19	10	15	20
40-44	3	4	4	14	17	20	12	16	16	12	20	22
45-49	1	1	1	10	10	11	7	8	7	7	11	12
50-54	*	*	1	6	5	5	2	3	3	4	5	5
55-59	*	*	1	3	2	2	2	2	3	2	3	3
60 and over												

* Less than 0.5 percent.

1/Not included in total active pilots.

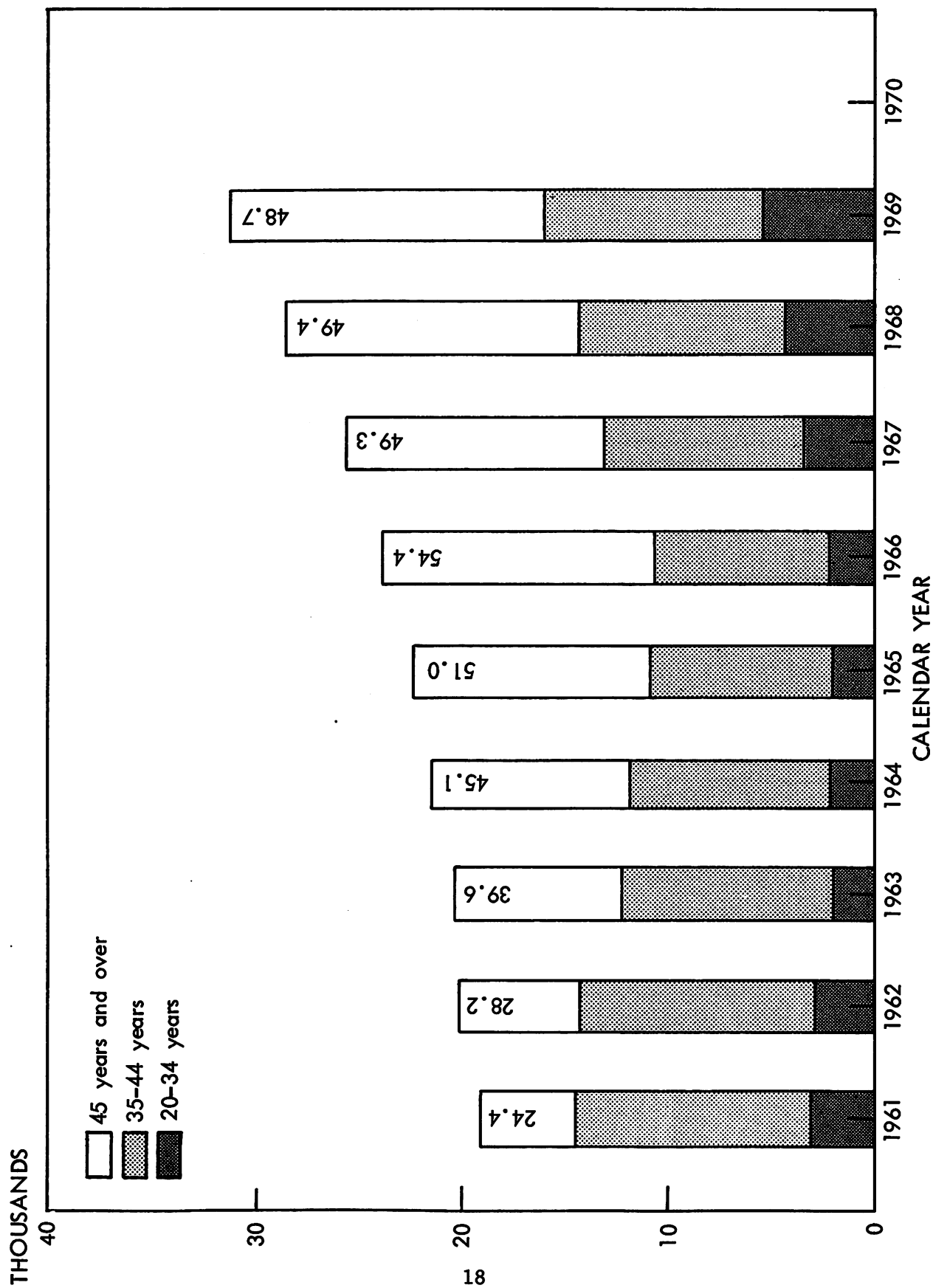


Figure 4. Active Airline Transport Pilots by Selected Age Groups: December 31, 1961-69

Table 11.—Airline Transport Certificates Held, by
Selected Age Groups: 1961-69

Year	Total	Age group		
		20-34 years	35-44 years	45 years and over
	Number			
1961 ^{e/}	19,155	3,007	11,474	4,674
1962	20,032	2,901	11,469	5,662
1963	20,269	1,960	10,271	8,038
1964	21,572	2,003	9,845	9,724
1965	22,440	1,970	9,027	11,443
1966	23,917	2,043	8,873	13,001
1967	25,817	3,402	9,673	12,742
1968	28,607	4,481	9,990	14,136
1969	31,442	5,611	10,510	15,321
	Percent distribution			
1961	100.0	15.7	59.9	24.4
1962	100.0	14.5	57.3	28.2
1963	100.0	9.7	50.7	39.6
1964	100.0	9.3	45.6	45.1
1965	100.0	8.8	40.2	51.0
1966	100.0	8.5	37.1	54.4
1967	100.0	13.2	37.5	49.3
1968	100.0	15.7	34.9	49.4
1969	100.0	17.9	33.4	48.7

Table 12.—Airline Transport Pilots--Selected Data
1960-68

Calendar year	Total airline transport pilots	Employed ^{1/}		Annual payroll (\$000)	Average annual salary
		Number	Percent of total		
1960	18,279	11,460	62.7	179,690	15,679
1961	^{e/} 19,155	13,936	72.8	236,473	16,968
1962	20,032	13,820	69.0	246,670	17,849
1963	20,269	13,994	69.0	258,856	18,498
1964	21,572	15,136	70.2	288,942	19,090
1965	22,440	16,881	75.2	339,381	20,104
1966	23,917	20,955	87.6	415,996	19,852
1967	25,817	23,246	90.0	502,478	21,616
1968	28,607	24,586	85.9	606,276	24,659

^e - Estimated.

^{1/} Includes pilots and copilots employed by the certificated route air carriers as of December 31.

Source: Total airline transport pilots, FAA.
Employment and payroll, CAB.

Table 13.—Number and Percent Distribution of Private and Student Pilots by Hours Flown: 1969
(Cumulative hours flown up to 1969)

Hours flown	Private		Student	
	Number	Percent of total	Number	Percent of total
Total	<u>1</u> /299,491	100.0	<u>1</u> /203,520	100.0
0-199	119,557	39.9	195,578	96.1
200-499	82,959	27.7	2,310	1.2
500-999	40,731	13.6	590	.3
1,000-2,999	32,615	10.9	429	.2
3,000-4,999	5,750	1.9	73	*
5,000-9,999	2,186	.8	57	*
10,000-14,999	329	.1	20	*
15,000-19,999	90	*	8	
20,000 and above	15,274	5.1	4,455	2.2

*Less than .05 percent.

1/Pilots holding active certificates, December 31, 1969.

2/Distribution based on flight hours reported on medical reports.

Table 14.—Selected Airman and Aircraft Data: December 31, 1969

FAA region and state	Active pilots		Eligible aircraft ^{1/}		Estimated 1969 population (000) ^{2/}
	Total	Per 10,000 population	Total	Per 10,000 population	
Total	720,028	35.7	127,164	6.3	201,924
United States--total.	708,312		127,008		
Eastern region--total	173,966	23.4	28,070	3.8	74,347
Connecticut	8,976	29.9	1,080	3.6	3,000
Delaware	1,691	31.3	541	10.0	540
District of Columbia ..	1,566	19.6	772	9.7	798
Kentucky	6,406	19.8	920	2.8	3,232
Maine	3,029	31.0	557	5.7	978
Maryland	8,711	23.1	1,462	3.9	3,765
Massachusetts	12,765	23.3	1,748	3.2	5,467
New Hampshire	2,333	32.5	362	5.0	717
New Jersey	19,328	27.0	2,669	3.7	7,148
New York	35,160	19.2	5,902	3.2	18,321
Ohio	31,316	29.2	5,319	5.0	10,740
Pennsylvania	24,651	20.9	4,070	3.4	11,803
Rhode Island	1,589	17.4	207	2.3	911
Vermont	1,195	27.2	268	6.1	439
Virginia	12,517	26.8	1,635	37.2	4,669
West Virginia	2,733	15.0	558	3.1	1,819
Southern region--total ...	92,131	32.0	3/16,284	5.7	28,768
Alabama	10,028	28.4	2,079	5.9	3,531
Florida	33,926	53.4	4,988	7.9	6,354
Georgia	15,194	32.7	2,657	5.7	4,641
Mississippi	5,679	24.1	1,370	5.8	2,360
North Carolina	11,314	21.7	2,189	4.2	5,205
South Carolina	5,597	20.8	1,004	2.5	2,692
Tennessee	10,393	26.1	1,691	4.2	3,985
Central region--total	172,914	37.6	32,916	7.2	46,034
Illinois	34,760	31.5	5,580	5.1	11,047
Indiana	16,969	33.2	3,182	6.2	5,118
Iowa	12,432	44.7	2,399	8.6	2,781
Kansas	15,019	64.7	2,873	12.4	2,321
Michigan	25,706	29.3	4,977	5.7	8,766
Minnesota	18,014	48.7	3,293	8.9	3,700
Missouri	17,346	37.3	3,294	7.1	4,651
Montana	5,176	74.6	1,426	20.5	694
Nebraska	7,536	52.0	1,698	11.7	1,449
North Dakota	3,784	61.5	992	16.1	615
South Dakota	3,608	54.7	849	12.9	659
Wisconsin	12,564	29.7	2,353	5.6	4,233
Southwest region--total ..	88,018	43.0	17,156	8.4	20,489
Arkansas	6,275	31.5	1,579	7.9	1,995
Louisiana	10,184	27.2	2,043	5.5	3,745
New Mexico	6,015	60.5	1,130	11.4	994
Oklahoma	13,861	54.0	2,774	10.8	2,568
Texas	51,683	46.2	9,630	8.6	11,187
Western region--total	173,860	55.7	30,326	9.7	31,210
Arizona	9,824	58.0	1,982	11.7	1,693
California	104,722	53.9	17,100	8.8	19,443
Colorado	14,410	68.6	2,159	10.3	2,100
Idaho	4,263	59.4	1,070	14.9	718
Nevada	3,290	72.0	974	21.3	457
Oregon	10,819	53.2	2,562	7.1	2,032
Utah	4,698	45.0	737	7.1	1,045
Washington	19,609	57.6	3,146	9.2	3,402
Wyoming	2,225	69.5	596	18.6	320
Alaskan region--total	5,447	193.1	2,046	72.6	282
Pacific region--total	1,976	24.9	210	2.6	794
Outside U.S.--total	11,716	---	156	---	---

^{1/}Eligible aircraft count as of December 31, 1968.^{2/}Source: U.S. Bureau of the Census.^{3/}Excludes Puerto Rico (266) and the Virgin Islands (40).

II. ACTIVE NONPILOT CERTIFICATES HELD

Proportionately, airmen with active nonpilot ratings duplicated their 1968 growth. With an 8-percent gain, nonpilot ratings held totaled 269,775, as of December 31, 1969, as compared with 250,151 at the close of 1968.

Mechanics held 170,716 of the nonpilot ratings. Their 1968 count totaled 158,211. Both the proportionate representation (63 percent) and growth rate (8 percent) were identical with those recorded during 1968. The number of women mechanics also continued upward, with 269 as the current figure; the count for women mechanics at the close of 1968 was 228. The 17-percent growth rate was the same for 1968 and 1969.

The 9-percent increase in ground instructors surpassed all other categories of nonpilot airmen. There were 41,234 active ground instructor ratings held as of December 31, 1969, as against 37,889 last year. Commensurate with this increase, the number of pilot schools also rose. As compared with the 2,050 schools in existence at the end of 1968, the 2,170 pilot schools on record as of the first of 1970, constituted a 6-percent increase. There were 1,276 combined flight and ground schools, 717 flight schools, and 177 ground schools. Women with ground instructor ratings made up 66 percent of all women with nonpilot ratings. There were 1,917 women ground instructors at the close of 1969, 8 percent greater than the 1,769 on record for 1968.

Flight engineers and navigators continued to increase. The 1969 total of 23,867 flight engineers rose 8 percent above the 1968 figure (22,009). Although the number of flight navigators (3,011) was 2 percent above the 2,966 reported for 1968, the 1968 and 1969 increases fell far short of those recorded for earlier years. Between 1965 and 1967, the number of flight navigators increased 11 percent, 23 percent, and 21 percent, respectively. The deceleration reflected in the growth rates for 1968 and 1969, indicates a levelling off in the demand for flight navigators.

The trend in flight engineers is somewhat similar to that for flight navigators. From 1964 to 1967, annual increases for flight engineers fluctuated between 15 and 34 percent. The meager growth rates, 3 percent and 2 percent, respectively, stemmed from the improved navigational equipment which has caused a decrease in the demand for flight engineers.

Control tower operators continued their uptrend (7 percent) and numbered 19,851, as against 18,610 in 1968.

More detailed data pertaining to nonpilot airmen may be found in tables 1, 15, 16, and 17.

Table 15.—Total Active Nonpilot Airmen by FAA Region and State: December 31, 1969

FAA region and state	Total nonpilot airmen	Mechanic	Parachute rigger	Ground instructor	Dispatcher	Control tower operator	Flight navigator	Flight engineer
Total	269,775	170,716	6,070	41,234	5,026	19,851	3,011	23,867
United States--total .	262,376	165,531	6,023	40,652	3,953	19,696	2,952	23,569
Eastern region--total	77,605	51,207	1,666	11,198	1,506	5,197	1,094	5,737
Connecticut	3,283	2,160	64	439	21	132	99	368
Delaware	707	488	9	89	5	42	8	66
District of Columbia ...	807	493	21	163	14	68	8	40
Kentucky	1,144	477	108	257	2	213	8	79
Maine	899	490	28	184	4	138	8	47
Maryland	2,263	1,304	65	410	21	242	18	203
Massachusetts	7,892	5,763	132	1,011	59	428	45	454
New Hampshire	795	423	20	153	6	58	9	126
New Jersey	9,311	6,044	181	1,259	80	414	196	1,137
New York	24,666	16,942	284	3,030	1,096	1,066	527	1,721
Ohio	7,049	4,225	191	1,451	26	764	28	364
Pennsylvania	12,417	9,082	216	1,706	63	733	94	523
Rhode Island	953	568	44	186	5	93	9	48
Vermont	401	218	12	105	3	40	1	22
Virginia	4,150	2,068	256	571	96	635	34	490
West Virginia	868	462	35	184	5	131	2	49
Southern region--total	36,794	21,597	956	5,493	660	3,763	228	4,097
Alabama	3,439	2,231	73	574	8	437	6	110
Florida	18,760	11,784	243	2,495	435	1,371	165	2,267
Georgia	7,069	4,007	208	842	151	668	15	1,178
Mississippi	1,107	523	27	274	3	207	4	69
North Carolina	2,699	1,331	209	525	34	441	19	140
South Carolina	1,274	578	43	285	1	261	7	99
Tennessee	2,446	1,143	153	498	28	378	12	234
Central region--total	46,701	28,105	1,078	8,819	450	3,440	155	4,654
Illinois	11,240	6,715	171	1,918	182	605	49	1,600
Indiana	3,527	2,113	131	693	21	370	11	188
Iowa	2,221	1,216	54	575	8	212	9	147
Kansas	4,455	2,889	80	780	36	354	6	310
Michigan	5,475	3,313	119	1,113	29	552	24	325
Minnesota	6,054	3,550	73	868	76	279	17	1,191
Missouri	6,976	4,636	113	1,254	81	397	11	484
Montana	1,392	651	168	376	4	126	8	59
Nebraska	1,370	727	40	350	3	151	6	93
North Dakota	662	361	21	173	---	67	1	39
South Dakota	733	398	18	212	1	61	3	40
Wisconsin	2,596	1,536	90	507	9	266	10	178
Southwest region--total ...	30,974	19,097	736	5,636	227	2,749	105	2,424
Arkansas	1,205	537	47	348	3	185	5	80
Louisiana	2,454	1,310	73	457	19	336	11	248
New Mexico	1,190	598	63	289	3	194	3	40
Oklahoma	8,686	6,335	140	1,377	18	431	18	367
Texas	17,439	10,317	413	3,165	184	1,603	68	1,689
Western region--total	66,799	42,935	1,533	9,222	939	4,273	1,344	6,553
Arizona	2,844	1,860	114	507	5	236	15	107
California	46,232	31,150	819	5,654	630	2,360	1,164	4,455
Colorado	4,501	2,265	78	906	106	294	31	821
Idaho	1,004	600	64	215	6	74	2	43
Nevada	798	361	30	189	13	178	10	17
Oregon	2,022	1,168	132	340	11	228	18	125
Utah	1,204	644	54	237	17	166	6	80
Washington	7,622	4,512	229	1,062	147	691	96	885
Wyoming	572	375	13	112	4	46	2	20
Alaskan region--total	1,543	1,058	36	173	87	120	1	68
Pacific region--total	1,960	1,532	18	111	84	154	25	36
Outside U.S.--total	7,399	5,185	47	582	1,073	155	59	298

Table 16.—Women with Active Nonpilot Certificates by FAA Region and State: December 31, 1969

FAA region and state	Total	Mechanic	Parachute rigger	Ground instructor	Dispatcher	Control tower operator	Flight navigator	Flight engineer
Total	2,912	269	449	1,917	36	222	1	18
United States--total ..	2,887	263	449	1,904	31	221	1	18
Eastern region--total	688	60	84	468	11	59	-	6
Connecticut	36	10	7	15	--	4	-	--
Delaware	8	4	--	4	--	--	-	--
District of Columbia ...	15	---	1	13	--	1	-	--
Kentucky	23	---	6	17	--	--	-	--
Maine	15	1	4	9	--	1	-	--
Maryland	29	---	--	19	--	8	-	2
Massachusetts	59	2	4	49	--	4	-	--
New Hampshire	7	---	--	6	--	1	-	--
New Jersey	67	6	4	52	--	5	-	--
New York	156	13	5	116	11	10	-	1
Ohio	93	8	8	66	--	11	-	--
Pennsylvania	87	9	7	63	--	6	-	2
Rhode Island	22	---	12	9	--	1	-	--
Vermont	7	---	1	6	--	--	-	--
Virginia	52	1	25	19	--	6	-	1
West Virginia	12	6	--	5	--	1	-	--
Southern region--total	546	43	93	364	5	38	-	3
Alabama	100	2	3	89	1	5	-	--
Florida	233	38	17	156	4	16	-	2
Georgia	56	2	8	34	--	11	-	1
Mississippi	20	---	3	16	--	1	-	--
North Carolina	56	---	25	31	--	--	-	--
South Carolina	15	---	1	14	--	--	-	--
Tennessee	66	1	36	24	--	5	-	--
Central region--total	506	38	49	381	2	34	-	2
Illinois	100	7	2	87	1	3	-	--
Indiana	60	2	19	33	--	6	-	--
Iowa	33	2	2	28	--	1	-	--
Kansas	63	15	6	34	--	8	-	--
Michigan	65	4	3	52	--	6	-	--
Minnesota	27	4	2	19	--	--	-	2
Missouri	59	2	7	45	--	5	-	--
Montana	17	---	4	13	--	--	-	--
Nebraska	15	---	1	13	--	1	-	--
North Dakota	6	1	--	5	--	--	-	--
South Dakota	19	---	--	19	--	--	-	--
Wisconsin	42	1	3	33	1	4	-	--
Southwest region--total ...	453	29	116	281	2	22	-	3
Arkansas	17	---	3	13	--	1	-	--
Louisiana	26	1	2	19	--	3	-	1
New Mexico	37	---	15	21	--	1	-	--
Oklahoma	81	11	15	55	--	--	-	--
Texas	292	17	81	173	2	17	-	2
Western region--total	659	89	102	389	9	66	1	3
Arizona	43	6	6	29	--	2	-	--
California	410	72	56	228	5	46	1	2
Colorado	66	2	7	51	2	3	-	1
Idaho	20	2	2	13	--	3	-	--
Nevada	17	---	5	10	--	2	-	--
Oregon	31	---	13	17	--	1	-	--
Utah	17	1	7	8	--	1	-	--
Washington	48	5	5	29	2	7	-	--
Wyoming	7	1	1	4	--	1	-	--
Alaskan region--total	22	2	4	11	2	2	-	1
Pacific region--total	13	2	1	10	--	--	-	--
Outside U.S.--total	25	6	--	13	5	1	-	--

Table 17.—Active Nonpilot Certificates Held, by Category and Age Group of Holder: 1965, 1967, and 1969

Age group	Type of certificate											
	Total nonpilot			Mechanic			Parachute rigger			Ground instructor		
	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965
Total	269,775	231,801	204,463	170,716	146,572	135,351	6,070	5,347	4,584	41,234	34,262	31,403
16-19	492	282	43	353	219	39	4	9	---	75	21	3
20-24	14,283	9,494	5,463	8,291	5,322	3,423	452	421	249	1,695	686	183
25-29	28,987	21,064	14,869	16,468	11,395	9,114	907	856	726	3,734	1,447	644
30-34	33,880	29,496	24,543	17,070	15,542	15,405	1,166	1,113	949	2,801	1,625	1,114
35-39	35,589	30,882	27,583	21,765	19,369	18,430	1,000	753	633	2,479	2,160	2,159
40-44	33,069	36,697	39,422	23,229	25,587	27,511	657	650	634	3,870	4,970	5,794
45-49	48,291	45,131	40,910	33,196	30,316	27,355	690	559	500	8,412	8,367	7,981
50-54	33,845	26,849	23,752	22,742	17,665	15,650	435	386	360	7,160	6,290	5,820
55-59	19,228	15,148	13,430	12,803	9,915	8,757	327	293	276	4,906	4,016	3,617
60 and over	22,111	16,758	14,448	14,799	11,242	9,667	427	307	257	6,102	4,680	4,088
Control tower operator												
Dispatcher												
1969	5,026	4,441	4,104	19,851	17,425	14,875	3,011	2,891	1,797	23,867	20,863	12,349
16-19	---	---	---	55	32	1	---	---	---	---	1	---
20-24	60	38	6	3,446	2,349	1,455	6	23	---	333	655	147
25-29	356	230	147	3,014	2,674	2,805	244	371	65	4,264	4,091	1,368
30-34	518	457	399	3,879	4,042	3,497	684	617	164	7,762	6,100	3,015
35-39	627	544	517	4,100	3,644	2,809	497	383	240	5,121	4,029	2,795
40-44	653	707	731	1,852	1,686	1,759	354	431	438	2,454	2,666	2,555
45-49	915	972	988	1,963	1,921	1,723	612	664	606	2,503	2,332	1,757
50-54	881	725	644	1,082	753	553	483	313	208	2,062	717	517
55-59	510	414	380	313	234	194	100	69	61	269	207	145
60 and over	506	354	292	147	90	79	31	20	15	99	65	50
Flight navigator												
Flight engineer												
1969	5,026	4,441	4,104	19,851	17,425	14,875	3,011	2,891	1,797	23,867	20,863	12,349
16-19	---	---	---	55	32	1	---	---	---	---	1	---
20-24	60	38	6	3,446	2,349	1,455	6	23	---	333	655	147
25-29	356	230	147	3,014	2,674	2,805	244	371	65	4,264	4,091	1,368
30-34	518	457	399	3,879	4,042	3,497	684	617	164	7,762	6,100	3,015
35-39	627	544	517	4,100	3,644	2,809	497	383	240	5,121	4,029	2,795
40-44	653	707	731	1,852	1,686	1,759	354	431	438	2,454	2,666	2,555
45-49	915	972	988	1,963	1,921	1,723	612	664	606	2,503	2,332	1,757
50-54	881	725	644	1,082	753	553	483	313	208	2,062	717	517
55-59	510	414	380	313	234	194	100	69	61	269	207	145
60 and over	506	354	292	147	90	79	31	20	15	99	65	50

Table 17.—Active Nonpilot Certificates Held, by Category and Age Group of Holder: 1965, 1967, and 1969—Continued

Age group	Type of certificate											
	Total nonpilot			Mechanic			Parachute rigger			Ground instructor		
	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965
Total	100	100	100	100	100	100	100	100	100	100	100	100
16-19	*	1	*	*	*	*	*	*	---	*	*	*
20-24	5	4	3	5	4	3	7	8	5	4	2	1
25-29	11	9	7	10	8	7	15	16	16	9	4	2
30-34	13	13	12	10	10	11	19	21	21	7	5	4
35-39	13	13	13	13	13	14	17	14	14	6	6	7
40-44	12	16	19	14	17	20	11	12	14	9	15	18
45-49	18	19	20	19	21	20	11	10	11	20	24	24
50-54	13	12	12	13	12	12	7	7	8	18	18	19
55-59	7	6	7	7	7	6	6	6	6	12	12	12
60 and over	8	7	7	9	8	7	7	6	5	15	14	13
Type of certificate												
Age group	Dispatcher			Control tower operator			Flight navigator			Flight engineer		
	1969			1969			1969			1969		
	1969	1967	1965	1969	1967	1965	1969	1967	1965	1969	1967	1965
Total	100	100	100	100	100	100	100	100	100	100	100	100
16-19	*	---	---	*	*	*	---	---	---	---	*	---
20-24	1	1	*	17	14	10	*	1	---	1	3	1
25-29	7	5	3	15	15	19	8	13	4	18	20	11
30-34	10	10	10	20	23	23	23	21	9	33	29	25
35-39	13	12	13	21	21	19	17	13	13	22	19	23
40-44	13	16	18	9	10	12	12	12	24	10	13	21
45-49	18	22	24	10	11	11	20	23	34	11	11	14
50-54	18	17	16	5	4	4	16	11	12	4	4	4
55-59	10	9	9	2	1	1	3	2	3	1	1	1
60 and over	10	8	7	1	1	1	1	1	1	*	*	*

*Less than 0.5 percent.

III. AIRMAN CERTIFICATES ISSUED

Total original issuances (pilot and nonpilot) numbered 236,867, 5 percent below the number of original ratings issued during 1968 (247,799). This marked the second 12-month decrease in original issuances. During 1969, 48,848 additional ratings were issued, as compared with 44,640 during 1968, a 9-percent gain. The overall decrease in original issuances stemmed from the 6-percent decline in pilot ratings issued. Nonpilot ratings rose 11 percent above the previous year's issuances.

The decline in student starts which began in mid-1968, has persisted. (See table 20 and figure 5.) Student certificates issued, 132,926, fell 11 percent below the 149,444 issued during 1968. Reflecting the impetus of G.I. Bill education and company promoted training programs, student starts remained on the uptrend from 1960 to 1967. However, as of June 1968, student starts issued monthly began to decline and have remained on the downtrend until February 1970. During March of 1970, student starts showed a 5-percent increase above March of 1969. However, as shown in figure 5, issuances during the first quarter of 1970 (24,433) fell 7 percent below those issued during the first quarter of 1969 (26,176). This quarterly decrease fell 9 percentage points below the rate of decrease for the first quarter of 1969.

It should be noted that although there are many factors stimulating this trend, primarily, it stems from the fact that despite increases in spendable income, higher prices have absorbed a significant share of the gain in after tax income. This has prompted considerable consumer concern over the Nation's economy. As has been previously stated:

"Moreover, the evidence of attitude surveys during the year suggested that consumers grew increasingly concerned over the economy, the outlook and the general state of the world. It is not uncommon for a sense of unease^{1/} to be reflected in a dampening of the desire to spend."

Following a 6-percent decrease in private pilot issuances, the number issued during 1969 (54,597) rose one percent above the 54,232 issued in 1968.

^{1/}U.S. Department of Commerce, Survey of Current Business, January 1, 1970, p.12.

Despite the reversal in the majority of ATR pilots from the older to the younger age groups and an overall increase in the total number of active ATR pilot ratings held during 1968, concern for the ATR count was prompted by a 5-percent decrease in the number of these ratings issued during calendar year 1968. However, the 33-percent gain in ATR ratings issued during 1969 prompts more optimism for future ATR counts. During 1969, 3,469 pilots received their ATR ratings, as against 2,601 in 1968. The growth in ATR issuances reflects, in part, the effects of carrier sponsored training programs.

Up to 1967, flight instructor certificates issued registered sizeable annual increases. Calendar year 1968 showed a 2-percent decrease in issuances and a 32-percent decrease in active flight instructor certificates held. This reversal was caused by a change in the selection criteria which stipulates that beginning with 1968, the flight instructor count would include only those who held current medical certificates, along with a flight instructor certificate issued within the past two years. With this regulation, the number of flight instructor certificates held and those issued annually may be expected to resume their original growth trend.

Following a 7-percent drop in instrument ratings issued during 1968, these added ratings rose 15 percent during 1969 and totaled 20,628. Commercial pilots were issued 16,663, or 81 percent of the total IFR ratings issued. Instrument ratings issued to pilots with private ratings represented 17 percent of the total (3,556). Rotorcraft pilots were issued the remaining 409 IFR ratings.

Despite fluctuations in future pilot counts and the number of ratings issued annually, present estimates forecast a pilot population of 1,540,500 by January 1, 1980. (See table 22.)

Table 18.—Airman Certificate Issuances: Calendar Years 1964-69

Category of certificate	1964		1965		1966		1967		1968		1969	
	Original issuances	Additional ratings	Original issuances	Additional ratings	Original issuances	Additional ratings	Original issuances	Additional ratings	Original issuances	Additional ratings	Original issuances	Additional ratings
Pilot—total	121,372	17,679	141,007	21,631	188,530	26,635	241,526	35,146	228,374	34,751	215,259	38,569
Student	84,629	---	94,635	---	129,180	---	159,399	---	149,444	---	132,926	---
Private	26,425	4,394	33,337	4,981	42,464	5,648	57,520	8,036	54,232	7,926	54,597	8,096
Commercial	8,772	10,123	11,043	12,557	14,210	15,360	19,996	21,272	20,157	21,795	21,399	25,706
Airline transport	983	3,114	1,177	4,018	1,513	5,571	2,745	5,726	2,601	4,911	3,469	4,616
Helicopter (only)	344	48	549	74	822	53	1,411	105	1,433	94	2,326	148
Glider (only) ...	191	---	252	---	316	2	422	4	476	17	521	---
Other pilot	28	---	14	1	25	1	33	3	31	8	21	3
Non-pilot—total ...	8,088	3,856	9,484	3,781	12,446	4,888	17,952	7,585	19,425	9,889	21,608	10,279
Mechanic	4,216	1,847	5,033	1,907	5,336	2,142	7,910	3,056	10,977	4,690	12,816	5,476
Parachute rigger.	500	44	389	28	378	45	498	37	349	36	387	46
Ground instructor	398	220	561	253	804	362	2,430	1,121	3,546	1,360	3,604	1,294
Dispatcher	101	---	111	---	129	---	292	---	268	1	276	---
Control tower operator	1,368	1,745	1,227	1,593	1,291	2,054	1,799	2,229	1,881	2,584	2,106	2,717
Flight navigator.	19	---	163	---	573	---	546	---	116	---	166	---
Flight engineer .	1,486	---	2,000	---	3,935	285	4,477	1,142	2,288	1,218	2,253	746
Flight instructor certificates	2,412	997	3,255	1,284	4,047	1,608	6,062	2,729	5,971	3,078	7,380	3,539
Instrument ratings*.	---	8,697	---	11,000	---	14,192	---	19,255	---	17,972	---	20,628

* Special ratings shown on pilot certificates represented above; not to be added to total.

NOTE: Additional ratings are entered on current airman certificates as follows:

Private, commercial, and airline transport pilot—aircraft category, class, and type ratings and instrument rating.

Helicopter pilot—instrument and type ratings.

Flight instructor—ratings for each aircraft category in which the holder is qualified to instruct and for instrument flying instruction.

Mechanic—airframe and powerplant ratings.

Parachute rigger—senior or master rigger ratings.

Ground instructor—ratings for each subject in which the holder is qualified to give ground instruction.

Air traffic control tower operator—junior/senior ratings for airports where holder may control air traffic.

Table 19.—Airman Certificates Issued by Class of Conductor: Calendar Year 1969

Category of certificate	Total ratings issued	Original ratings				Additional ratings			
		Total	Examiner	Inspector	No test	Total	Examiner	Inspector	No test
Total	282,841	236,712	206,009	11,890	18,813	46,129	32,982	7,675	5,472
Pilot--total	253,828	215,259	192,582	9,801	12,876	38,569	27,710	7,093	3,766
Student	132,926	132,926	129,001	3,925	---	---	---	---	---
Private	62,693	54,597	48,683	2,198	3,716	8,096	7,333	541	222
Commercial	47,105	21,399	13,846	515	7,038	25,706	20,070	2,203	3,433
Airline transport	8,085	3,469	468	3,001	---	4,616	288	4,328	---
Helicopter (only)	2,474	2,326	93	111	2,122	148	17	20	111
Glider (only)	521	521	482	39	---	---	---	---	---
Other pilot	24	21	9	12	---	3	2	1	---
Non-pilot--total	29,013	21,453	13,427	2,089	5,937	7,560	5,272	582	1,706
Mechanic	18,292	12,816	9,883	605	2,328	5,476	5,148	271	57
Parachute rigger .	276	232	95	137	---	44	16	28	---
Ground instructor	4,898	3,604	---	---	3,604	1,294	---	---	1,294
Dispatcher	276	276	98	178	---	---	---	---	---
Control tower operator	2,106	2,106	2,104	2	---	---	---	---	---
Flight navigator .	166	166	109	57	---	---	---	---	---
Flight engineer ..	2,999	2,253	1,138	1,110	5	746	108	283	355
Flight instructor* ..	10,919	7,380	---	7,380	---	3,539	---	3,539	---

Note: Excludes renewals and military comps.

*Special ratings shown on pilot certificates represented above, not to be added to total. Additional ratings are entered on current airman certificates as follows:

Private, commercial, and airline transport pilot--aircraft category, class, and type ratings and instrument rating.

Helicopter pilot--instrument and type ratings.

Flight instructor--ratings for each aircraft category in which the holder is qualified to instruct and for instrument flying instruction.

Mechanic--airframe and powerplant ratings.

Parachute rigger--senior or master rigger ratings.

Ground instructor--ratings for each subject in which the holder is qualified to give ground instruction.

Air traffic control tower operator--junior/senior ratings for airports where holder may control air traffic.

Table 20.—Instrument Ratings Issued: 1968 and 1969

Class of certificate	1969	1968	Percent change
Total—all groups	20,628	17,972	+15
Private pilots—total	<u>3,556</u>	<u>2,948</u>	<u>+21</u>
Private airplane (only)	3,293	2,732	+21
Private airplane, private glider	45	38	+18
Private airplane, commercial glider	4	5	-20
Private airplane, private helicopter	5	11	-55
Private airplane, commercial helicopter .	55	46	+20
Private airplane, private glider, private helicopter	2		
Private airplane (other)	152	116	+31
Commercial pilots--total	<u>16,663</u>	<u>14,709</u>	<u>+13</u>
Commercial airplane (only)	<u>15,302</u>	<u>13,506</u>	<u>+13</u>
Commercial airplane, private glider	56	41	+37
Commercial airplane, commercial glider ..	87	71	+23
Commercial airplane, private helicopter .	7	1	
Commercial airplane, commercial heli- copter	1,196	1,078	+11
Commercial airplane, private glider, commercial helicopter	2	4	-50
Commercial airplane, commercial glider, commercial helicopter	10	7	+43
Commercial airplane (other)	3	1	
Rotorcraft pilots—total	<u>409</u>	<u>315</u>	<u>+30</u>
Commercial helicopter	<u>408</u>	<u>315</u>	<u>+30</u>
Commercial helicopter, private glider ...	1	---	

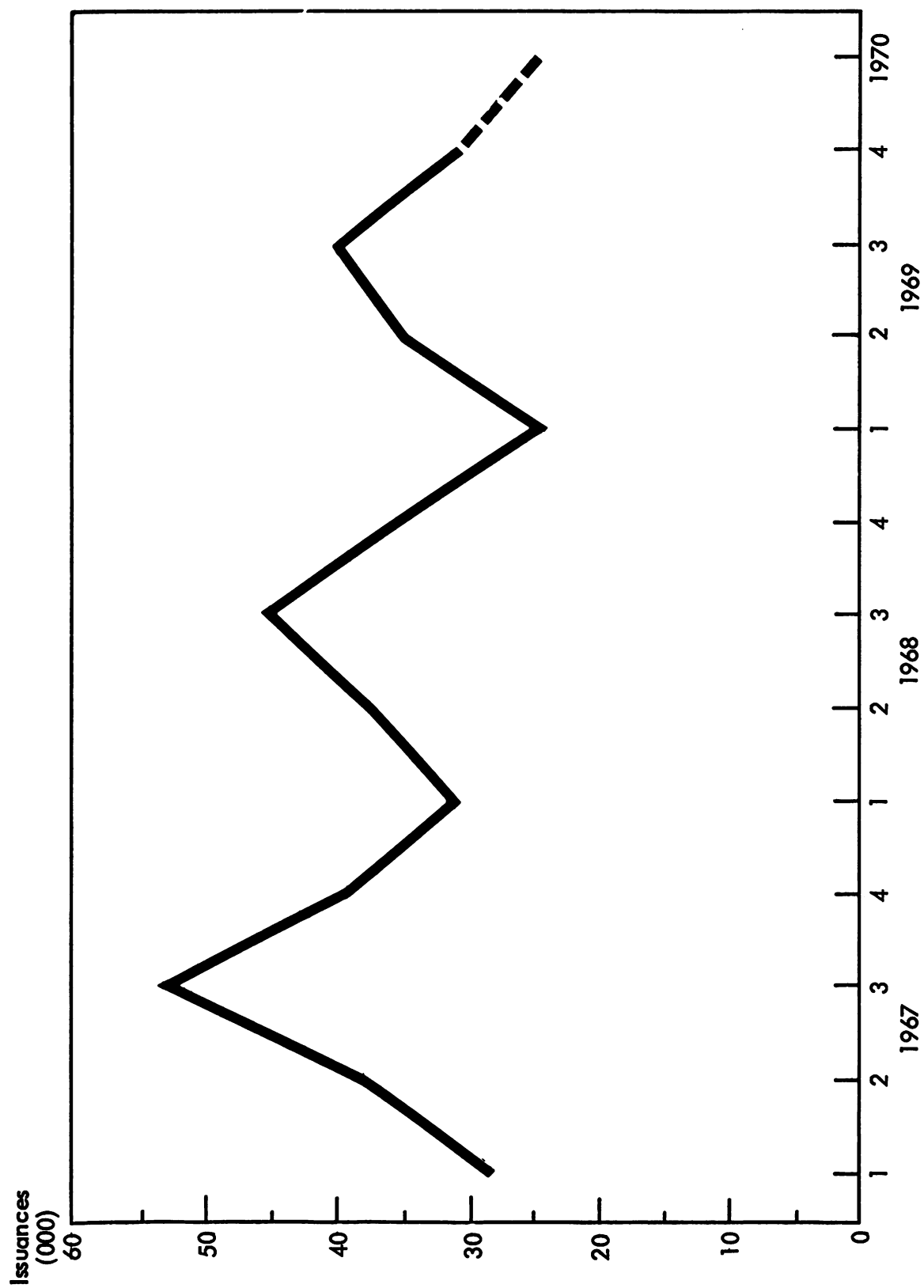


Figure 5. Student Certificates Issued Quarterly: 1967-69

Table 21.—Student Issuances by Month: 1967-69

Month	1969	1968	1967
Total	132,926	149,444	159,399
January	8,677	10,082	8,238
February	8,094	10,055	8,690
March	9,405	10,883	11,279
April	11,766	13,979	10,176
May	10,990	11,841	10,038
June	12,811	11,549	17,968
July	14,512	15,957	19,892
August	13,965	16,064	19,428
September	11,751	13,339	14,256
October	14,620	15,962	17,478
November	8,363	10,466	12,528
December	7,972	9,267	9,378

Table 22.--Active Pilots by Type of Certificate

As of January 1	Total	Students	Private ^{1/}	Commercial	Airline Transport	Helicopter	Glider	Instrument Rated ^{2/}
1965	431,041	120,743	178,013	108,428	21,572	1,058	1,227	84,442
1966	479,770	139,172	198,690	116,665	22,440	1,392	1,411	93,637
1967	548,757	165,177	224,703	131,539	23,917	1,819	1,602	107,171
1968	617,931	181,287	256,253	150,135	25,817	2,573	1,866	122,573
1969	691,695	209,406	283,865	164,458	28,607	3,166	2,193	139,346
1970*	721,300	204,000	302,000	177,000	31,400	4,300	2,600	155,900
1971*	729,900	197,000	310,000	183,000	31,800	5,000	3,100	157,000
1972*	775,600	209,000	330,000	194,000	33,600	5,400	3,600	167,000
1973*	828,500	223,000	354,000	207,000	34,700	5,700	4,100	182,000
1974*	895,400	242,000	383,000	224,000	35,600	6,200	4,600	199,000
1975*	973,900	264,000	417,000	244,000	37,000	6,800	5,100	220,000
1976*	1,058,800	289,000	454,000	265,000	37,900	7,300	5,600	242,000
1980*	1,440,500	390,000	628,000	361,000	44,800	8,600	8,100	346,000
1981*	1,540,500	415,000	676,000	385,000	46,800	8,900	8,800	376,000

* Forecast.

^{1/} Includes pilots previously classified as "other".
^{2/} Not included in total.

Source: Aviation Forecasts: Fiscal Years 1970-1981, Department of Transportation, Federal Aviation Administration, Office of Aviation Economics.



C101411737

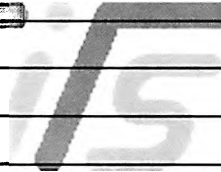
RETURN Harmer E. Davis Transportation Library
TO : Institute of Transportation Studies
412 McLaughlin Hall

ALL BOOKS MAY BE RECALLED.
Overdue books are subject to replacement charges.

Renewals may be made by email to:
itslib@berkeley.edu
or by phone: 510.642.3604

DUE AS STAMPED BELOW

AUG 04 2011

Institute of
Transportation
Studies

UNIVERSITY OF CALIFORNIA, BERKELEY, CA 94720

